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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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05/24/2001

Claude Basso

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11/03/2004

IBM CORPORATION

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EXAMINER

NGUYEN, VAN KIM T

ART UNIT

PAPER NUMBER

2661

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/864,971

Applicant(s)

BASSO ET AL.

Examiner

Van Kim T. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 8 and 16 is/are rejected.
- 7) ☒ Claim(s) 2-7, 9-15 and 17-23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date March 02, 2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 8, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pfeiffer et al (US 5,629,925), in view of Yoshida (US 5,504,863).

As shown in Figures 1-3, Pfeiffer discloses network processing (NP) devices (ST1, ST2, ST3) for routing data packets from a source (ST1) to a destination (ST2, ST3) via a switch fabric (ST2 and SE), with each NP device supporting a number of interface ports (IN1 ... IN28, OUT1... OUT28).

Pfeiffer discloses a switching network in which multiple paths are possible for a connection from an input link to an output link, comprising switching modules (SM11 ... SM14, SM21 ... SM24, SM31 ... SM34) interconnected by hard-wired path, each including a circuit for fault detection in the switching module (col. 1: lines 26-38). Inherently, in order to detect a fault in a switching module, the fault detection circuit has to monitor/track the operational status of the switching module and all its supported ports, i.e. in/out/source/destination ports; and maintain the operational status information at each switching module in order to update and report the state of the switching module in the event of a change in condition/operational status (col. 3: lines 41-63).

Pfeiffer also discloses a routing mechanism (CONTR) for routing packets from source NP devices (ST1) to destination NP devices (ST2, ST3) and destination ports (OUT1 ... OUT128) thereof in accordance with a packet routing protocol. The control unit CONTR receives data from the switching modules regarding faults and traffic parameters of the switching module, and route the current packet to a target network processor device (ST2, ST3) and destination port (OUT1 ... OUT128) when the target network processor device and destination ports thereof are determined as operational (no fault), and routing packets to another operational NP device and port thereof upon determination of non-operational target network processor device and destination port (reconfiguring the interconnection structure of the switching network), thus minimizing packet loss, i.e., no packets lost due to transmitting to a faulty switching module (cols. 3-5; esp. col. 3: lines 41-63, and col. 4: lines 39-65).

However, Pfeiffer does not explicitly call for a mechanism for determining the operational status of a target network processing device and target interface port of a current packet to be routed prior to routing.

As shown in Figures 1-12, Yoshida teaches a method and system for monitoring the state of network element devices 4-1 to 4-11 (target interface port) and the upstream devices (target network processing device) from each of the network element device being monitored (cols. 3-5, esp. col. 3: lines 35-45). Thus obviously, prior to the routing a packet, the operational status of the network element device and the associated upstream devices are determined.

Since it is highly desirable to optimize a communication system's performance, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize Yoshida's method of monitoring the state of network element devices in Pfeiffer's

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communication system, motivated by the need to improve network performance by minimizing data packets losses.

Allowable Subject Matter

2. Claims 2-7, 9-15, and 17-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance:

Claims are considered allowable when reading the claims none of the references of record alone or in combination, in light of the specification, disclose or suggest the combination limitations specified in the dependent claims including: the routing mechanism implements an ECMP protocol including next hop routing table for mapping a destination address associated with a packet to be forwarded to one or more next hop option in the networking environment; or each network processor device maintain a data structure receiving values from the tracking mechanism implementing logic for comparing the received value against a first value indicating all NP devices or interface ports for the NP device are operational prior to routing of a current packet, and initiating routing of the packet to the NP device and target port when the values match.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Senevirathne et al (US 6,798,740); Klassen et al (US 6,711,137); Blumenau et al (US 6,711,6112); Davis et al (US 6,701,449); Helles et al (US 6,639,895); Chirashnya et al (US 6,601,195); Blanc et al (US 6,411,599); Cidon et al (US 6,269,330); Manning et al (US 5,909,427); and Diebboll et al (US 5,886,643).

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Van Kim T. Nguyen whose telephone number is 571-272-3073. The examiner can normally be reached on 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

vkn


KENNETH VANDERPUYE
PRIMARY EXAMINER